

# MONITORING ONION PESTS ACROSS THE TREASURE VALLEY – 2018

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## Objective

Provide growers with regional assessments of pest abundance in commercial fields.

## Introduction

Growers continue to be challenged in how to manage thrips and Iris yellow spot virus (IYSV) that thrips vector. The Idaho-Eastern Oregon region has a range of different subregions, and thrips and virus pressure varies across these subregions. A number of growers have asked for assistance in monitoring pest pressure within their particular districts so they can make better informed management decisions.

## Methods

Six to eight commercial fields in each of seven growing areas were monitored for thrips and IYSV on a weekly basis. Those areas were 1) Ontario, 2) Vale, 3) Oregon Slope/Weiser, 4) Nyssa, 5) Adrian, 6) Fruitland, and 7) Parma. Thirty-five of the fields were yellow onions, 11 were red onion fields, and 1 was a white onion field.

Averages of adult and immature thrips, and IYSV incidence for each district were reported to growers, crop advisors, and others each week from May 11 to August 10 when plants began to senesce and fields were being prepared for harvest.

## Results and Conclusions

Overall thrips pressure was lower in 2018 than in several previous years. Figure 1 shows mean total thrips per plant in untreated plots at the Malheur Experiment Station from 2013 to 2018.

Adult thrips were first detected in fields during the first survey on May 11 in all areas except Parma and Vale. Plants in the 12 fields with thrips were at the 2-leaf stage. By the following week, adult thrips had colonized at least some fields in all growing areas, and immature thrips were present in fields in all growing areas. Thrips populations built up rapidly in early June. The percentage of plants with thrips went from 12% on May 11 to 38% on May 18. Almost all plants had thrips (>90% of plants infested) from June 8 through July 13. As tops began to go down during late July in early season varieties, thrips started to disperse from fields (Fig. 2 and 3). The white onion field in this year's monitoring provides indication of how plant maturity can affect thrips abundance. This field adjoined an earlier planted red onion field. The whites continued to grow vigorously through the end of July and into August while the reds were senescing at this time.

Thrips populations continued to increase in the whites during this time as numbers in the reds rapidly declined.

Adult thrips numbers peaked at the end of June and beginning of July (Fig. 4). Immature thrips numbers peaked about 1 week later than the peak of adults in most fields (Fig. 5).

The first plants infected with IYSV were detected on June 15 in the Ontario and Oregon Slope areas. Iris yellow spot virus was found in all growing areas by the end of June, but the incidence, in general, did not increase rapidly until plants matured and insecticide applications had ceased (Fig. 6). Infections on individual plants in 2018 did not appear to be very severe or extensive (i.e., relatively few lesions per plant). The low incidence and severity of IYSV in 2018 suggest that direct feeding damage from thrips would have been more important in determining yield losses than virus damage.

Thrips populations varied across the growing regions and fluctuated depending on insecticide applications (Figs. 1-5). Fields on the Oregon Slope tended to have the fewest thrips and lowest incidence of IYSV (Figs. 1 and 2). Fields in Ontario, especially around Cairo Junction, and the Fruitland area had the highest incidence of IYSV.

## **Acknowledgments**

I appreciate the assistance of the cooperating growers and crop advisors. This project was funded by the Idaho-Eastern Oregon Onion Committee.

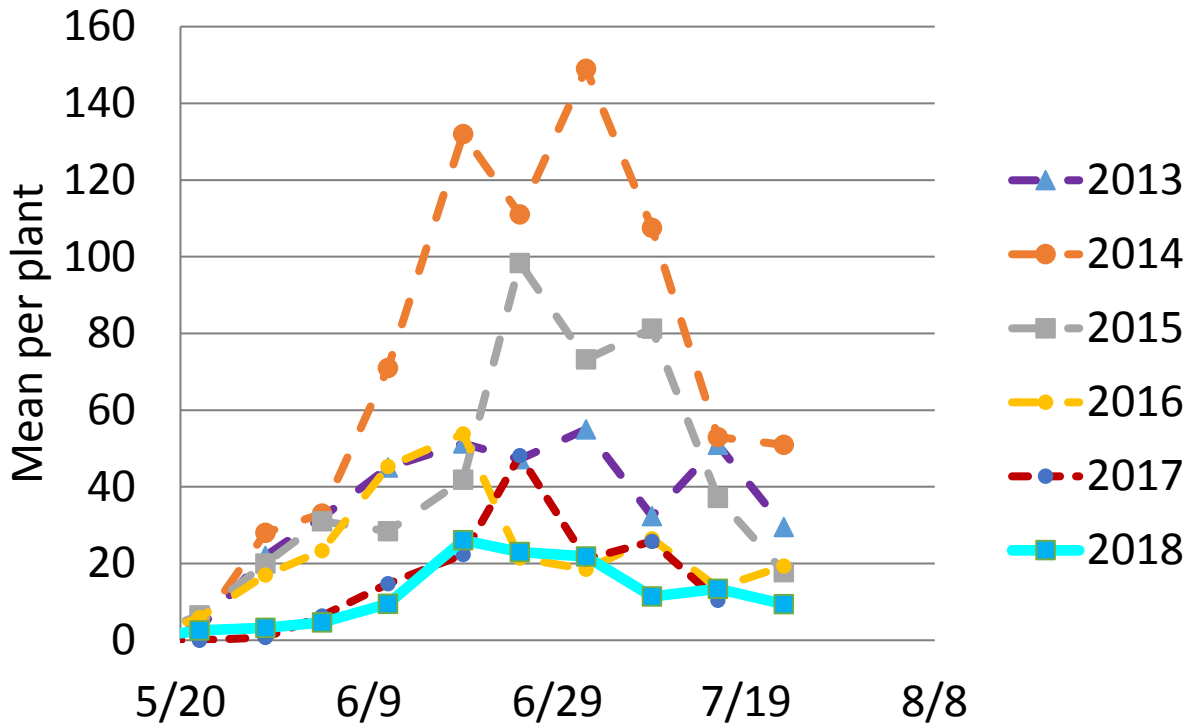


Figure 1. Mean total thrips per plant in untreated onion plots at the Malheur Experiment Station from 2013 to 2018.

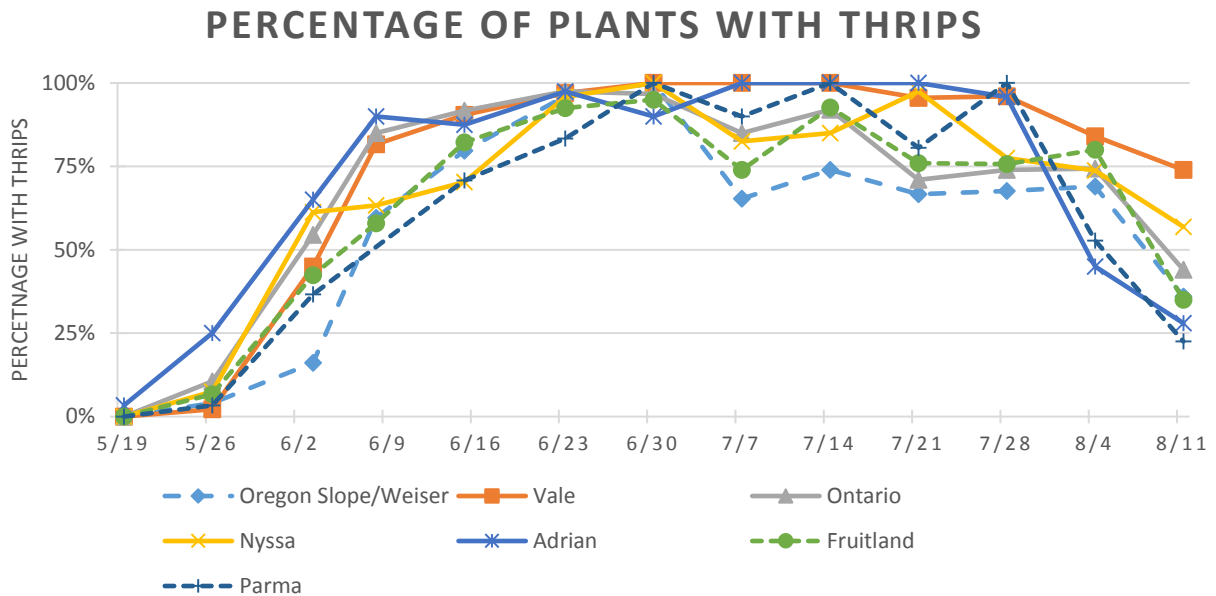


Figure 2. Average percentage of onion plants with thrips present during the 2018 season from different growing areas of the Treasure Valley.

### SEASONAL TOTAL THRIPS TRENDS - 2018

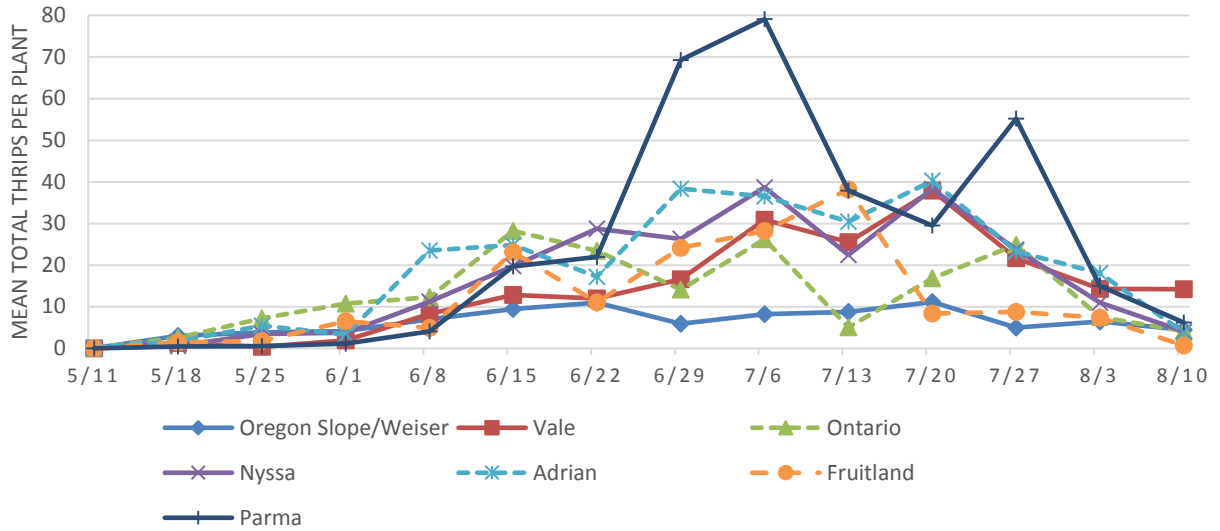


Figure 3. Seasonal trends of total thrips in onion growing areas of the Treasure Valley during 2018.

### SEASONAL THRIPS ADULT TRENDS

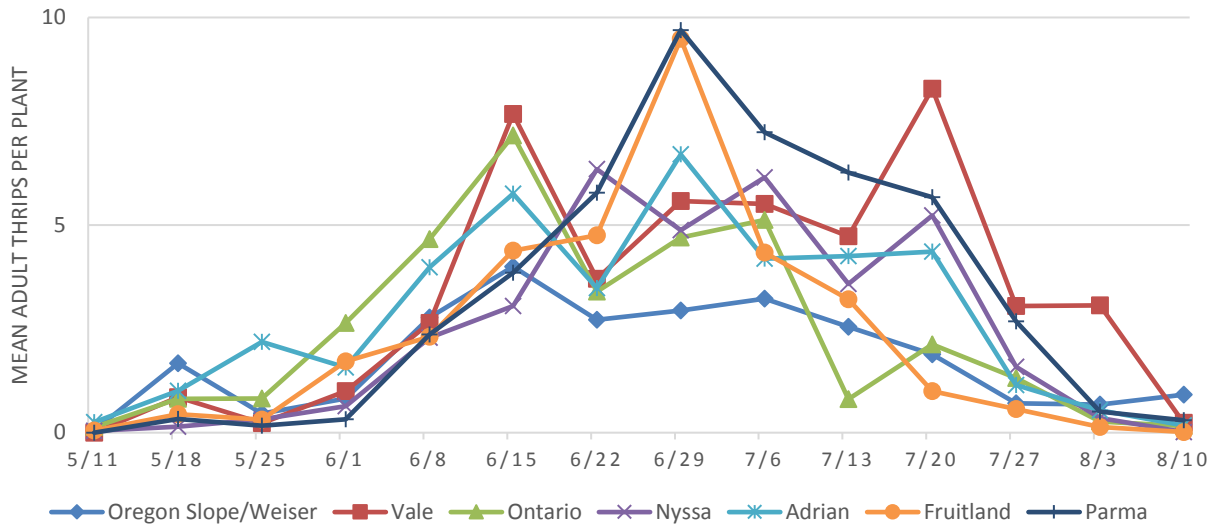


Figure 4. Seasonal trends of adult thrips in onion growing areas of the Treasure Valley during 2018.

## SEASONAL IMMATURE THRIPS TRENDS

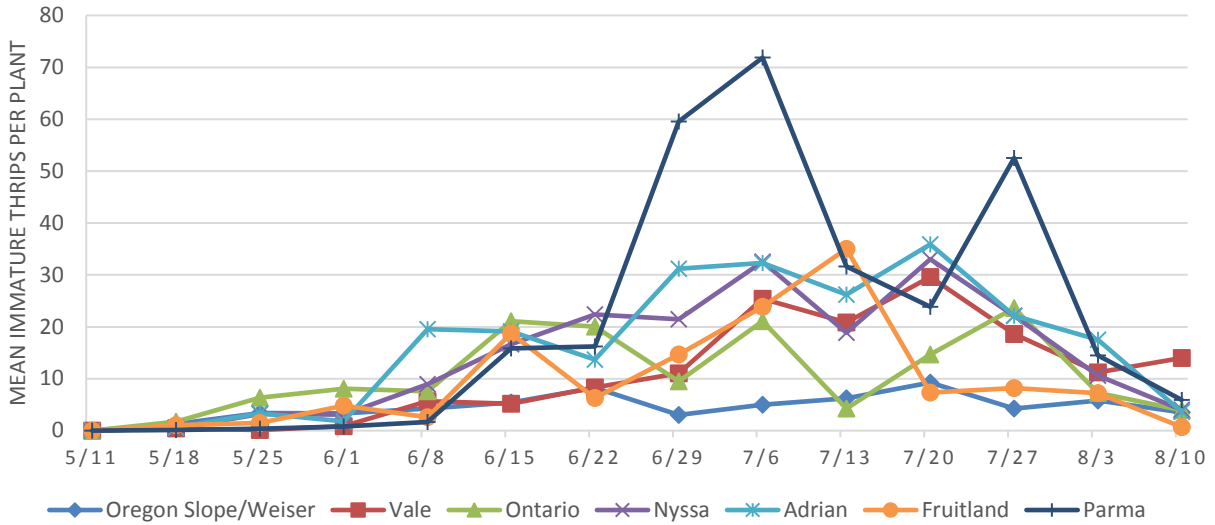


Figure 5. Seasonal trends of immature thrips in onion growing areas of the Treasure Valley during 2018.

## INCIDENCE OF IRIS YELLOW SPOT

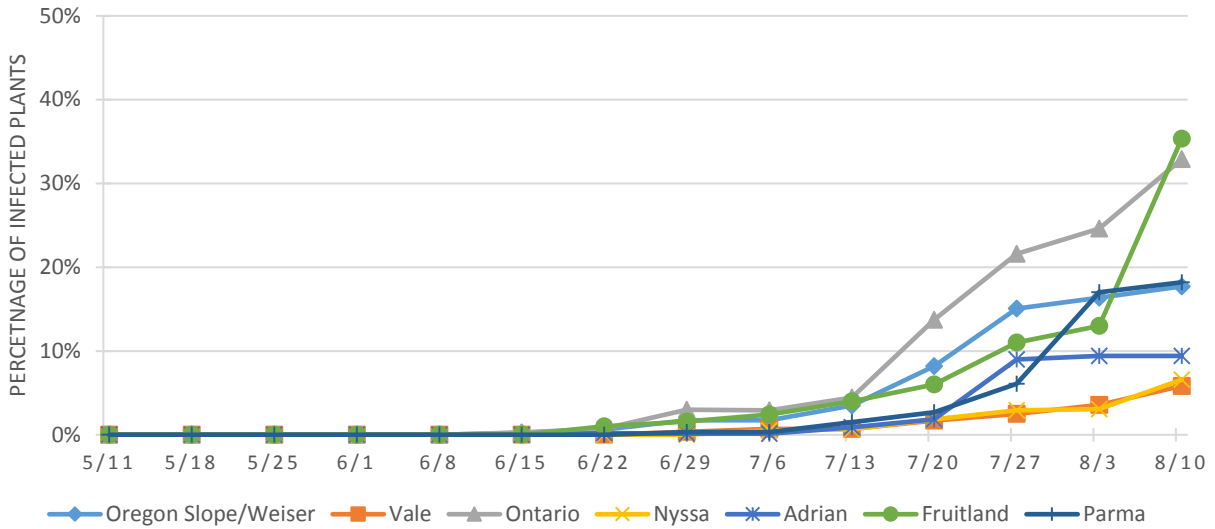


Figure 6. Seasonal incidence of Iris yellow spot virus in commercial onion fields from different growing areas of the Treasure Valley during 2018. Values are the mean percentage of infected plants per field for each area.